



August 12, 2011

**Via: Electronic Submittal at <http://fjallfoss.fcc.gov/ecfs2/>**

Federal Communications Commission  
Docket No. 11-109  
FCC Headquarters  
Room TW-A325  
445 12<sup>th</sup> St., SW  
Washington, DC 20554

RE: In Reply to Comments on Conditional FCC Authorization of a Request by LightSquared Subsidiary LLC (LightSquared) for Modification of Its Authority for an Ancillary Terrestrial Component (File No. SAT-MOD-20101118-00239), and June 30, 2011 Technical Working Group Report, IB Docket No. 11-109.

Dear Sirs:

On behalf of The North American Coal Corporation (North American Coal), this letter is to submit reply comments to the FCC (Federal Communications Commission) in the matter of Conditional Authorization granted to LightSquared LLC for Modification of its Authority for an Ancillary Terrestrial Component, and the findings of the joint Technical Working Group Report ("TWG Report") which describes the results of studies evaluating interference by LightSquared's transmissions with GPS (Global Positioning System) operations (June 30, 2011). Specifically, this letter is in reply to, and in support of, comments submitted by the Coalition to Save Our GPS ("Coalition") and Stansell Consulting.

North American Coal agrees with the findings and recommendations of the Coalition and Stansell Consulting. We concur that LightSquared's commercial operation proposed within the L1 band width should not be allowed until testing which demonstrates their high-strength 4G LTE signals do not harmfully interfere with GPS receivers is completed to the satisfaction of the FCC.

The North American Coal Corporation annually produces some 30 million tons of lignite coal from mines in North Dakota, Texas, Louisiana and Mississippi. This coal is an essential fuel for generating electricity and producing synthetic natural gas. A fully functioning GPS is essential for North American Coal to conduct surface coal mining and reclamation in a safe and environmentally sound manner. GPS is at all North American Coal mines and is used for land surveys, design and construction of roads, ponds, mining pits and other facilities, and for surveying coal removal areas, determining coal ownership and calculating royalties. GPS is also

essential for grading post-mine landscapes to reclaim lands after coal removal has been completed.

The Coalition and Stansell Consulting supported the findings of the TWG Report, noting signal interference throughout the L1 frequency band width under consideration (1525-1559 MHz). This interference is so severe as to render GPS systems inoperable, mostly because signals were so close to the frequency used by GPS and were several orders of magnitude higher than low-strength GPS signals, essentially overwhelming them. Such interference was found as far as a few miles from proposed base stations.

The type of work conducted in the mining industry requires a very high level of precision using special high-precision receivers. As described in the TWG Report, testing of HPNT (High-Precision, Networks, and Timing) GPS receivers showed significant interference from 4G LTE signals, even over long ranges. This is especially troubling for North American Coal. We operate 115 GPS receivers at our mining operations, including base stations, mobile units for surveyors, and units installed in pickup trucks and heavy equipment.

Without the use of GPS North American Coal's substantial capital investment would be lost, and additional labor and other resources would be needed to conduct the surveying and data applications currently conducted by GPS. This is because less efficient and more labor-intensive survey systems, made obsolete by GPS, would have to again be used in the future. We estimate an additional cost to North American Coal of \$1-1½ million annually if signal interference caused the loss of GPS at our operations. This cost would be directly passed on to our utility customers and ultimately paid by electricity consumers.

We disagree with statements by LightSquared (*Recommendation of LightSquared Subsidiary LLC, August 1, 2011*) dismissing the seriousness of this signal interference and loss of GPS. They state (page 31) that "legacy precision and network GPS receivers represent a small fraction of the overall installed base of GPS receivers". This is little comfort to the users of the estimated 200,000 GPS devices cited by LightSquared as a "small fraction" (page 32), who depend on these units for critical commercial and industrial applications, such as construction and mining, or for the thousands of farmers using these in precision agriculture.

Additionally, LightSquared states that these users should not be especially concerned with interference because "a substantial percentage of precision GPS receivers are used in applications such as precision farming and precision mining that are highly unlikely to be near a LightSquared base station – and certainly not in the next several years given the expected rollout of LightSquared's network over time" (page 32). Because they plan to place base stations initially in more densely populated areas, apparently rural users shouldn't be concerned – it will be a very long time before they get to the less populated areas to establish transmission stations, and they will be so far apart that these GPS users shouldn't be worried for quite a while.



Yet a major part of LightSquared's promotion of their combined land/satellite based 4G LTE system involves bringing broadband access to rural areas currently underserved by limited cellular coverage. In fact LightSquared recently announced the Empower Rural America initiative, developed to "help close the broadband adoption gap in rural America. Broadband is critical to rural areas where it can create jobs, contribute to economic development and introduce innovations in education, healthcare and public safety" (<http://www.lightsquared.com/press-room/press-releases/lightsquared-forms-rural-initiative-to-ensure-lightsquared-and-gps-co-existence/>). In their concluding statements LightSquared notes that if they lose this opportunity "rural America would lose" (page 36).

Apparently Americans living far away from cities will be well-served by a broad 4G LTE system providing excellent coverage in remote rural areas, but at the same time somehow we're to understand that farmers, miners and other precision GPS users in remote rural areas will not be impacted by these transmitters? We can't have it both ways.

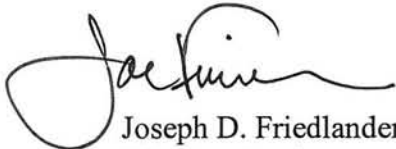
We understand LightSquared has revised their plans and proposes to limit transmissions to the lower 10 MHz of their allocated frequency range, some distance from frequencies used by precision GPS. Although this is certainly a favorable move, and one that could be supported, we are aware of no definitive testing that has been completed that assures their transmissions at this lower range will not interfere with GPS used by mines, farmers or others. Until such testing is completed we cannot wholeheartedly endorse their proposal as a solution.

While we are in favor of greater broadband access in rural areas (indeed many of our employees and their families live in these areas, and other sectors of our operations would benefit from enhanced broadband coverage) the potential disruption of GPS systems, especially high-precision systems such as we use, would result in significant additional costs and tremendous inefficiencies from going back to other survey systems. Before being allowed to commercially operate their ground/satellite 4G LTE system within the L1 frequency range, we recommend that testing be completed, to the satisfaction of the FCC, that demonstrates no GPS interference.

Thank you for your consideration of these comments.

Sincerely,

THE NORTH AMERICAN COAL CORPORATION



Joseph D. Friedlander  
Director, Environmental and Regulatory Affairs  
The North American Coal Corporation

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